

### **REMARKS**

The Office Action dated April 19, 2007 has been carefully reviewed and considered. Reconsideration and withdrawal of the outstanding rejections are respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-5 are pending in the present application. The Examiner has set forth that claims 1-5 are rejected under 35 U.S.C. 103(a).

Without conceding the propriety of the rejection, Applicant amended claim 1 based on support from the second paragraph on page 5 of the description. More particularly, the applicant amended the "at a velocity of at least about 50m/s" to "at a velocity of 50m/s to 100m/s".

It is respectfully submitted that claim 1 is patentable over Reed(US 3,382,159) in view of Lepsius et al.(US 6,349,857), Kataoka et al.(US 5,168,671), Yoshizumi et al.(US 6,033,730) and Jonte et al.(US 6,551,671). The reasons are as follows:

There is a great difference between the invention recited in claim 1 and Reed. More specially, one object of some aspects of the invention is to solve the problem of the prior art in which the coating structure and the method are comparatively complicated. And a method for making a dispensing apparatus portion is provided to increase the corrosion and abrasion resistance of the substrate. A technical solution of claim 1 is as follows: (a)providing a shotblasting layer on a portion of a substrate; (b) the shotblasting layer is provided by a plurality of fine and uniform granules of steel pellets having grain size of about 0.3 to 0.6mm and stainless steel pellets having a grain size of about 0.14 to 0.5mm at a velocity of 50m/s-100m/s; (c)providing a plurality of metal plated layers over the shotblasting layer; (d) the shotblasting

layer and metal plated layers together are present in an amount and thickness sufficient to increase the corrosion and abrasion resistance of the substrate.

Reed (US 3,382,159) discloses a method of decoratively finishing the surface of metals. The object thereof is to eliminate some laborious and expensive steps of metal finishing process. Reed discloses the following technical features (clo. 3 line 68 to col. 4 line 20): (b1) a blast method in which a coarser media of 80 to 100 mesh, blasting pressure of 70 to 90 p.s.i. are used, and different metals which are used as blasting media including aluminum oxide, garnet, steel and iron, plastic and glass; (d1) providing a plurality of metal plated layers including copper, nickel and chrome (Fig. 2 and clo. 5 line 25 to 44). In addition, that "80 mesh" equals to 0.18mm is disclosed by Yoshizumi et al. (US 6,033,730). Further, it is evidenced by Kataoka et al. (US 5,168,671) that 70-90p.s.i would result in velocities in excess of 100m/s.

Based on the contrast between the technical solution of claim 1 and that of Reed, it can be seen that claim 1 has the following distinguished technical feature, that is, the shotblasting is conducted by the *mixing pellets of steel pellets and stainless steel pellets*. Moreover, *the size of the steel pellets is 0.3-0.6mm and the size of the stainless steel pellets is 0.14-0.5mm*. In addition, *the velocity range is 50-100m/s*. The shotblasting conducted by the mixing pellets having such size and velocity can achieve remarkable effects:

*(I) The effects of the mixing of the steel pellets and the stainless steel pellets:*

The hardness of the steel pellets is high (for example, HRC 42-48). The main function of the steel pellets is to compress the surface of a substrate at high speed resulting the surface hardening. As the stainless pellets are austenitic steel, the stainless pellets would deposit a

stainless steel layer on the substrate while impacting the surface at high speed. And this will improve the corrosion resistance and abrasion resistance.

(II) The effects of the sizes of the steel pellets and the stainless steel pellets:

The sizes of the steel pellets and the stainless pellets are chosen base on lots of experiments. The size of the steel pellets (0.3-0.6mm) is larger than that of the stainless pellets (0.14-0.5mm), because the function of the steel pellets is to provide pressure on the substrate and the function of the stainless steel pellets is the deposit a layer on the surface. In addition, the large size of the steel pellets would improve the service life of the mixing pellets as the steel pellets is easy to be broken during shotblasting. If the size of mixing pellets is too large, the surface of the substrate would be coarse. On the contrary, if the size of mixing pellets is too small, the pressure on the substrate would not be sufficient and the quality of the surface will decrease.

(III) The effects of the range of the velocity of the shotblasting:

The applicant noticed that the velocity of the shotblasting has a great effect on the quality of the surface of the substrate. If the velocity is too large, the surface would be mechanical deformed. For example, if a thin mild steel substrate is processed by shotblasting at the speed of 120m/s, the surface is deformed. On the contrary, if the velocity is too small, for example, 40m/s, the hardness of the surface would decrease.

The surface of the substrate would not be rusted and would not change colors by taking advantage of the hardness of steel pellets and the merits of the stainless steel pellets at the same

time so that a clean, uniform and rustiness surface can be achieved and the steps of cleaning and acid washing etc. can be eliminated.

In contrast, Reed disclosed a blasting media. However, Reed didn't disclose the stainless steel pellets as well as the *mixing pellets of steel pellets and stainless steel pellets*. The size of the pellets in Reed is 80-100 mesh (?-0.18mm) and the pellets do not refer to stainless pellets. However, the size of the steel pellets of the mixing pellets in claim 1 is 0.3-0.6mm. The range (0.3-0.6mm) thereof is not overlap with the range of Reed (?-0.18mm). As the applicant has amended the velocity to 50m/s-100m/s, the range of the velocity is not overlapped with the range disclosed by the reference document any more. And it does not belong to the case provided by the MPEP 2144.05.

In conclusion, the said distinguished features are not disclosed by Lepsius et al. (US 6,349,857), Kataoka et al. (US 5,168,671, Yoshizumi et al. (US 6,033,730) and Jonte et al. (US 6,551,671). Therefore, it is not obvious for the ordinary skill in the art to achieve the technical solution of claim 1 when combining the Reed(US 3,382,159) with Lepsius et al.(US 6,349,857), Kataoka et al.(US 5,168,671), Yoshizumi et al.(US 6,033,730) and Jonte et al.(US 6,551,671). Therefore, claim 1 has patentability under 35 U.S.C. 103(a).

As claims 2-5 are dependent claims of claim 1, they are patentable at least for the reasons given above for claim 1.

The Examiner is respectfully requested to reconsider the patentability of claims 1-5 in view of the foregoing.

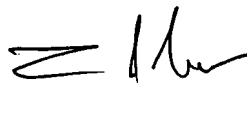
In view of the foregoing, reconsideration and allowance of the application are believed in order, and such action is earnestly solicited. Should the Examiner believe that a telephone

conference would be helpful in expediting prosecution of the application, the Examiner is invited to telephone the undersigned at 202-861-1696.

Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to Docket No. 56816.1560.

Respectfully submitted,

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